

REMARKS

This Amendment is in response to the Office Action mailed March 3, 2003. Claims 1-30 were examined in the Office Action and all were rejected. Claims 1, 5, 13, 21, 24, and 28 have been amended. No claims have been canceled. Reexamination and reconsideration are respectfully requested.

Claim Rejections – 35 U.S.C. § 112

Claims 28-30 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 28 has been amended to correct a typographical error, thereby providing proper antecedent basis to overcome the rejection. Claims 29 and 30, dependent upon claim 28, now overcome the rejection based upon claim 28.

Claim Rejections – 35 U.S.C. § 102

Claims 1, 2, 6, and 7 were rejected under 35 U.S.C. § 102(b) as being anticipated by Komai (JP 2-166678 A, hereinafter "Komai"). Independent claim 1 has been amended and Applicants respectfully submit that Komai does not teach each and every feature of Applicants' claimed invention as recited in amended independent claim 1. Applicant's claimed invention as recited in amended claim 1 is drawn to an actuator assembly for reading and writing data from and to a data storage disc in a disc drive, the actuator assembly comprising, among other features, (1) an actuator arm rotatably mounted adjacent the data disc, the arm having a top surface and a bottom surface and an arm circuit alignment pin projecting from one of the surfaces of the actuator arm and (2) an arm circuit fastened to one of the surfaces of the actuator arm, wherein the arm circuit has an arm circuit alignment aperture receiving the arm circuit alignment pin to position the arm circuit on one of the surfaces at the proximate end of the actuator arm. Unlike prior approaches, the arm circuit alignment aperture receives the alignment pin to bring the arm circuit beneficially closer to the data transducer and reducing the read/write signal transmission distance, thereby introducing less noise in the read/write signal and enhancing the overall performance of the disc drive.

In contrast, Komai teaches an extension part 21C of the cable part 21B, the extension part 21C mounted or positioned at a distal end of the swing arm 6, between the pivot bearing 7 and the coil supporting part 9A. Cable part 21A stops near the pivot location 7 and is not positioned at the proximate end of the actuator arm. The configuration of Komai only contemplates "mounting workability" and thus does not teach an arm circuit alignment aperture receiving the arm circuit alignment pin to position the arm circuit on the top or bottom surface at the proximate end of the actuator arm. (See abstract and FIGURES 1 and 3 of Komai). Consequently, Komai does not contemplate or teach positioning an arm circuit on one of the surfaces at the proximate end of the actuator arm. For at least these reasons, amended claim 1 is allowable over Komai.

Because claims 2, 6, and 7 inherit the language of amended claim 1, Applicants respectfully submit that claims 2, 6, and 7 are also allowable over Komai.

Claim 24 was rejected under 35 U.S.C. § 102(b) as being anticipated by Forbord et al (USPN 6,018,439, hereinafter "Forbord"). Applicants respectfully submit that Forbord fails as a 102b reference because Forbord was not patented more than one year prior to the date of application in the United States. The provisional application filing date to which the instant application claims priority is 6/20/2000, whereas the patent issue date of Forbord is 1/25/2000. However the content of Forbord was published in PCT patent WO 9913460 on 3/18/1999 which claims priority to the same provisional application as Forbord. Thus a 102b rejection based on the content of Forbord in the PCT publication is analyzed below.

Applicants respectfully submit that the content of Forbord does not teach each and every feature of Applicants' claimed invention as recited in amended independent claim 24. Applicants' claimed invention as recited in amended claim 24 is drawn to an actuator assembly in a disc drive, the disc drive including a data disc for storing data and a flex connector for communicating data signals to a printed circuit board, the actuator assembly comprising, among other features, (1) means for electrically coupling the data transducer to the flex connector wherein the means is located on the top surface or the bottom surface and at the proximate end of the actuator arm.

The Office Action considers the conductor strip 214 and the substrate 220 of Forbord as the means for electrically coupling the data transducer to the flex connector. Applicants

respectfully disagree and submit that neither the conductor strip 214 nor the substrate 220 are located on the top surface or the bottom surface and at the proximate end of the actuator arm as claimed in Applicants' amended claim 24. The Office Action also states on page 10, lines 5-7 that "Forbord... does not expressly disclose a signal producing portion fastened to the top surface or the bottom surface of the actuator arm." The conductor strip 214 of Forbord runs along the side of the actuator arm 204 and E-block 142, however the strip 214 is not located on the top or bottom surface of the actuator arm 204 and E-block 142. A fin 218 of the strip may fit into a slot 210 of the E-block 142 but not on the top or bottom surface of the actuator arm 204. The slots 210 extend between the actuator arms 204 and an axial slot 212 but not over the top or bottom surface of the actuator arms. (See page 23, lines 15-20 and FIGURES 12-15 of PCT patent WO 9913460 or Column 3, lines 6-9 and FIGURES 2-4 of Forbord).

Furthermore the substrate 220 is located adjacent to the actuator arm 204 at the E-block 142 or pivot bearing support portion but is not located on the top surface or the bottom surface and at the proximate end of the actuator arm. The proximate end of the actuator arm is beyond the E-block near the load beams 146 of Forbord. (Also see Applicants' FIGURE 2 for location of arm circuit 132). For at least the above reasons Forbord does not anticipate Applicants' amended claim 24 and the rejection should be withdrawn.

Claim Rejections – 35 U.S.C. § 103

Claims 10 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Komai. As previously discussed with reference to amended claim 1, Komai is deficient in teaching an arm circuit positioned on one of the surfaces at the proximate end of an actuator arm. Because claims 10 and 11 inherit the language of amended claim 1, Applicants respectfully submit that it would not have been obvious, given the teachings of Komai as a whole, to one of ordinary skill in the art at the time of the invention to provide an arm circuit fastened on the bottom surface at the proximate end of an actuator arm. As described above, Komai positions an extended part 21C at a distal end and only contemplates mounting workability and thus does not teach or suggest an arm circuit positioned on one of the surfaces at the proximate end of an actuator arm. For at least these reasons claims 10 and 11 are not made obvious in view Komai.

Claims 3, 8, 12, 13, 15, and 17-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Komai in view of Forbord. Forbord teaches a conductor assembly that connects a transducer supported on an E-block to a flex circuit mounted to the E-block. However Forbord does not teach or suggest an arm circuit fastened to the top or bottom surface of the actuator arm, wherein the arm circuit has an arm circuit alignment aperture receiving the arm circuit alignment pin to position the arm circuit on one of the surfaces at the proximate end of the actuator arm as recited in amended claim 1. Thus neither Komai nor Forbord either alone or in combination teach or suggest Applicants claimed invention as recited in amended claim 1.

Secondly, there is no motivation to combine Komai and Forbord to produce Applicants claimed invention. The Office Action states that one of ordinary skill in the art would have been motivated to provide the gimbal circuit of Forbord to the actuator assembly of Komai in order to provide the requisite electrical connection between an arm circuit and the transducer head. Applicants respectfully disagree and submit that there is no support or explanation in either reference for substituting the existing requisite electrical connection with the gimbal circuit. Forbord is concerned primarily with not having enough space in the drive housing for assembly or addition of new components. In contrast Komai is concerned with mounting workability of the existing assembly and possesses no suggestion of adding a gimbal circuit due to space constraints. For at least this reason as well, amended claim 1 is believed to be allowable over Komai in view of Forbord.

At least because claims 3, 8, 12, and 13 depend from amended claim 1, Applicants respectfully submit that claims 3, 8, 12, and 13 are not made obvious by Komai in view of Forbord.

Applicants' claimed invention as recited in amended independent claim 15 is drawn to an actuator assembly for reading and writing data from and to a data disc, the actuator assembly comprising, among other features, (1) a gimbal circuit electrically coupled with the data transducer and the arm circuit, the gimbal circuit being partially positioned along the head gimbal assembly and partially positioned along the top surface and on a proximate end of the actuator arm.

Applicants respectfully submit that the combination of Komai and Forbord fails to teach or suggest Applicants' claimed invention as recited in amended claim 15. As discussed above

Komai is deficient with regard to teaching an arm circuit mounted on the top or bottom surface at the proximate end of the actuator arm. Forbord teaches a conductor assembly that extends along the side of the actuator arm, however the conductor assembly is electrically coupled to the flex circuit at slots 210 beyond the actuator arm 204 at the bearing support portion of the assembly and not along a top surface at the proximate end of the actuator arm. (See Column 3, lines 5-10 and FIGURES 2-3 of Forbord). Thus, Forbord does not teach or suggest reducing the introduction of noise in the read/write signal by positioning an arm circuit along the top surface on the proximate end of the actuator arm. Thus the combination of Komai and Forbord fails to make obvious Applicants' claimed invention as recited in amended claim 15.

At least because claims 17-23 inherit the language of amended claim 15, claims 17-23 are also allowable over Komai in view of Forbord. Moreover, claims 17-18 and 20, 22-23 further define the invention of amended claim 15 by describing the type of connection that mounts the head gimbal assembly to the actuator arm (laser-weld per claim 17, or screw mounted as per claim 18), the manner in which a voice coil is mounted to the actuator arm (adhesive-bonded per claim 20), and the manner in which a pivot bearing is coupled to the actuator arm (via adhesive per claim 22 or press fit per claim 23). The Office Action takes Official notice that such mountings and couplings are notoriously old and well known in the art, but offers no such proof. Applicants respectfully traverse the Official notice and submit the findings, asserted to be well known, are not capable of instant and unquestionable demonstration as being well-known and there is not any evidence in the record to support an assertion that such mountings and couplings are old and well known in the art. See Manual of Patent Examining Procedure (MPEP), at §2144.03(A-C). As such, the Examiner has not established a prima facie case of obviousness and, until such proof is offered, claims 17-18, 20 and 22-23 are believed allowable over Komai in view of Forbord for at least these reasons as well. See MPEP, at §2144.03(A-C).

Claims 4, 5, 9, 14, and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Komai in view of Forbord et al. as applied to claims 3, 8, 12 and 15, and further in view of Marazzo (USPN 5,103,359, hereinafter "Marazzo"). For the reasons stated above, Komai and Forbord fail to teach or suggest Applicants' claimed invention as recited in amended claims 1 and 15. Thus the combination of Komai in view of Forbord and further view of Marazzo fails to teach or suggest Applicants' claimed invention as recited in amended claims 1 and 15. At least

because claims 4, 5, 9, and 14 depend from amended claim 1 and claim 16 depends from amended claim 15, claims 4, 5, 9, 14, and 16 are also allowable over Komai in view of Forbord, and further in view of Marazzo.

Claims 25 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Forbord et al. in view of Muto et al (JP 59-168906 A hereinafter Muto). Applicants respectfully submit that combining the electronic parts 12 of Muto with Forbord would change the principle of operation of Forbord. The electronic parts of Muto depend on the actuator arm acting as substrate instead of the substrate 220 of Forbord continuing as the substrate. The conductor assembly of Forbord would not be capable of connecting the transducer to the flex circuit without a substantial reconstruction and redesign of the conductor strip 214 shown in Forbord. Thus the teachings of Forbord and Muto are not sufficient to render obvious Applicants' claimed invention as recited in claims 25 and 26.

Furthermore, even if combined, Forbord modified by the chip 12 of Muto does not teach or suggest the actuator assembly of amended claim 24 wherein the means for electrically coupling is located on the top surface or the bottom surface at the proximate end of the actuator arm. As discussed above with regard to amended independent claim 24, Forbord is deficient as a reference because it does not teach or suggest a means for electrically coupling the data transducer to the flex connector wherein the means is located on the top surface or the bottom surface and at the proximate end of the actuator arm. Forbord modified by the chip 12 of Muto still does not teach or suggest Applicants' amended claim 24 because the chip may condition the signal but it will not serve as a means for electrically coupling the data transducer to the flex connector wherein the means is located on the top surface or the bottom surface and at the proximate end of the actuator arm. Because amended claims 25 and 26 depend from amended claim 24 and Forbord modified by the chip of Muto fails to teach or suggest amended claim 24, the combination also fails to teach or suggest claims 25 and claim 26.

Claims 27-29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Forbord et al. in view of Muto et al as applied to claim 26, and further in view of Komai. As discussed above Forbord in view of Muto is deficient as a reference combination rendering obvious each feature of claims 25 and 26. Thus the combination of those references further in view of Komai

is deficient to render claims 27-29, which depend from amended claim 24 and claims 25-26, obvious.

Claim 30 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Forbord et al. in view of Muto et al. and further in view of Komai as applied to claim 29, and further in view of Marazzo (USPN 5,103,359). For the reasons stated above with regard to claim 29 and at least because claim 30 depends from amended claim 24 and claim 29, claim 30 is also allowable over Forbord et al. in view of Muto et al., further in view of Komai and further in view of Marazzo.

Conclusion

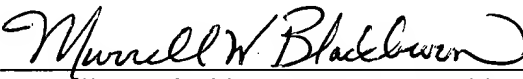
As originally filed, the present application included 30 claims, 3 of which were independent. As amended, the present application now includes 30 claims, 3 of which are independent. It is believed that no further fees are due with this Response. However, the Commissioner is hereby authorized to charge any deficiencies or credit any overpayment with respect to this patent application to deposit account number 13-2725.

As all claims now in the application are in condition for allowance, Applicants request the application be allowed and pass to issuance as soon as possible.

Respectfully submitted,

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